DEVELOPMENT OF AN ELECTRIC VEHICLE (EV) INFRASTRUCTURE PLAN FOR DELAWARE

Virtual Public Meeting #1
October 24, 2022

Introductions

Introductions

- DelDOT – Transportation Resiliency & Sustainability
  - Jim Pappas, PE
  - Stephanie Johnson
- DNREC – Division of Climate, Coastal and Energy: Climate and Sustainability
  - Breanne Preisen
  - Susan Love, AICP
- AECOM
  - Joe Hofstee, PE
  - Margaret Quinn
  - Brendan Connelly

Agenda

- Workshop Expectations
- Background: Why is an EV Infrastructure Plan Important?
- What is an EV Infrastructure Plan?
- Draft Plan Vision and Goal Areas
- Existing Conditions
- Charging Location Analysis
- Next Steps & How to Stay Involved
- Questions & Answers

Meeting Expectations

- First Public Meeting – there will be more to follow
- Why Are We Here?
  - Kick-off the planning process with members of the public
  - Begin public engagement
  - Start conversations
- How to Provide Comments or Ask Questions?
  - **Tonight**, use Zoom's Q&A function, anytime during the presentation and during the question-and-answer period, to offer comments or ask a question
  - **Anytime**, fill-out a comment form in the project's virtual room that can be accessed via the plan's website https://deldot.gov/Programs/NEVI/
  - **Anytime**, send an e-mail to evplan@delaware.gov

EV Infrastructure Plan Advisory Group

- DART First State
- Delaware Commute Solutions
- Delaware Electric Vehicle Association (DEEVA)
- Wilmington Area Planning Council (WILMAPCO)
- Dover/Kent County MPO
- Salisbury/Wicomico MPO (S/WMPO)
- Delaware Electric Cooperative (DEC)
- Exelon/Delmarva Power
- Delaware League of Local Governments (DLLG)
- Office of State Planning Coordination
- Healthy Communities DE
- Delaware Municipal Electric Corporation (DEMEC)
- State Chamber of Commerce
- La Ezperanza
- First State Community Action Agency
- Latin American Community Center
- League of Women Voters, Transportation Committee
- Imani Energy, Inc.
- Delaware Concerned Residents for Environmental Justice
- NAACP
- The Sierra Club, Delaware Chapter

Background:
Why is an EV Infrastructure Plan Important?
Some Basics on Electric Vehicles


The EV Infrastructure Plan helps implement Delaware's Climate Action Plan

Delaware's Climate Action Plan guides state efforts to **minimize greenhouse gas emissions** and **maximize resilience to climate change impacts.**

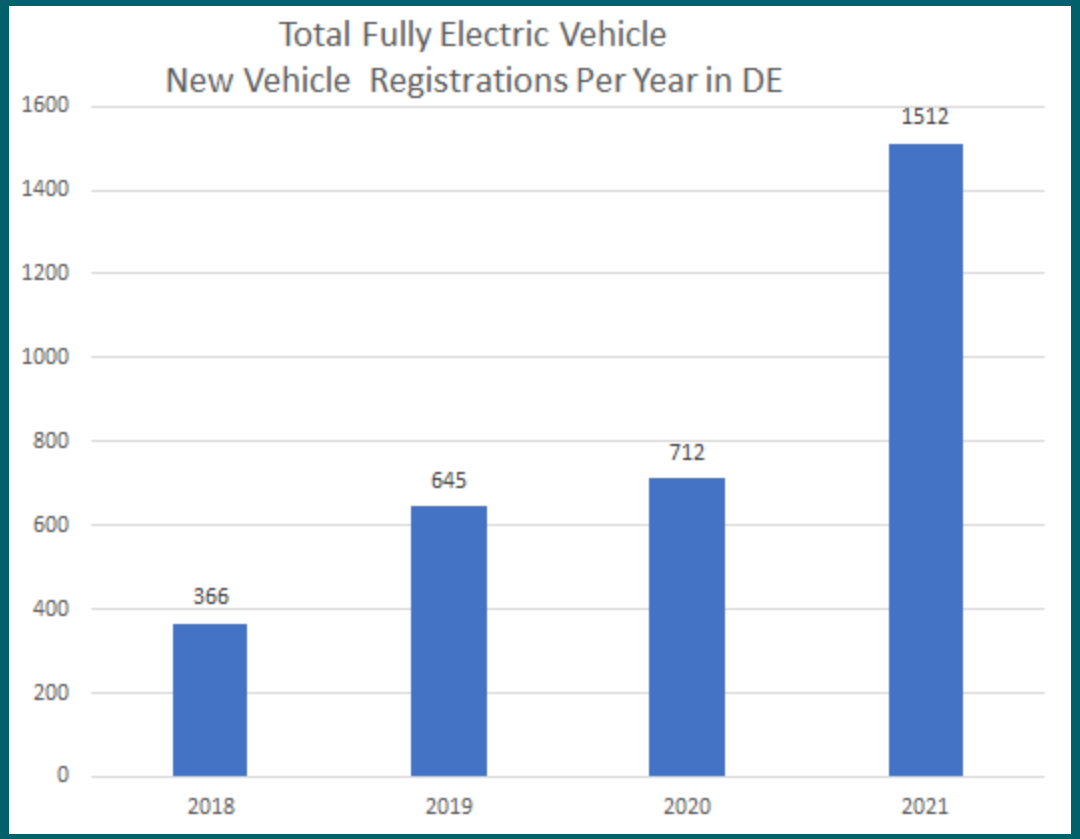
The Climate Action Plan was created to:

- Help Delaware meet its emissions reduction goal (26-28% from 2005 levels by 2025).
- Integrate emissions reduction and climate change adaptation actions.
- Set a course for state climate action in the decades ahead.

Specifically, the EV Infrastructure Plan will help support these strategies:

- Expand EV charging
- Ensure EVs contribute to grid stability
- Capitalize on EV transition to stimulate the economy and create jobs
- Strengthen consumer adoption of EVs

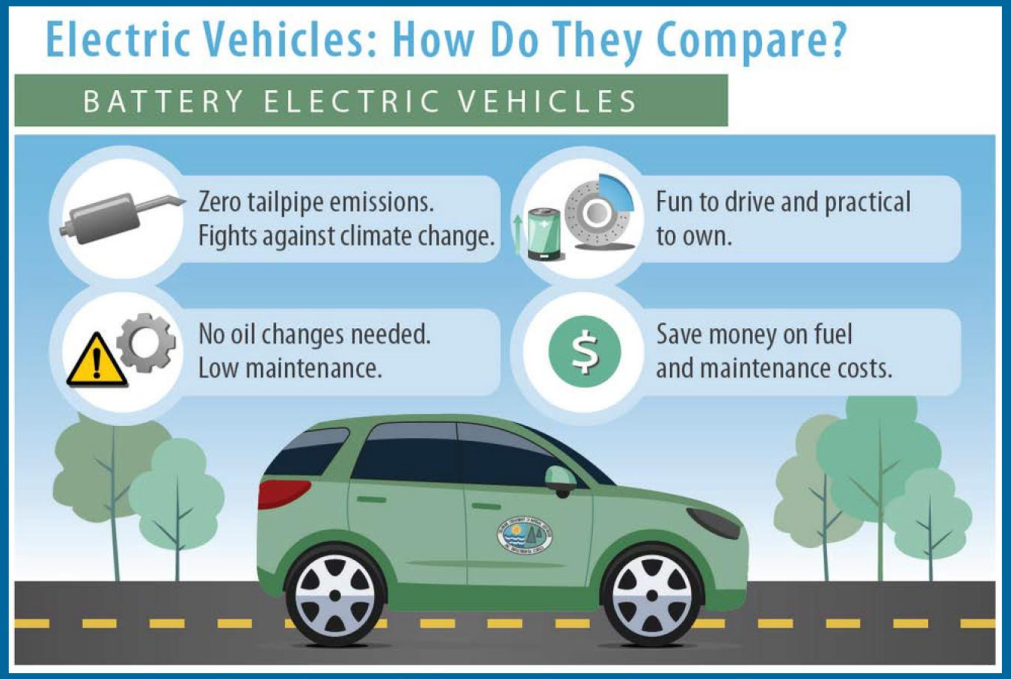
Delaware's Vehicular Future is Electric



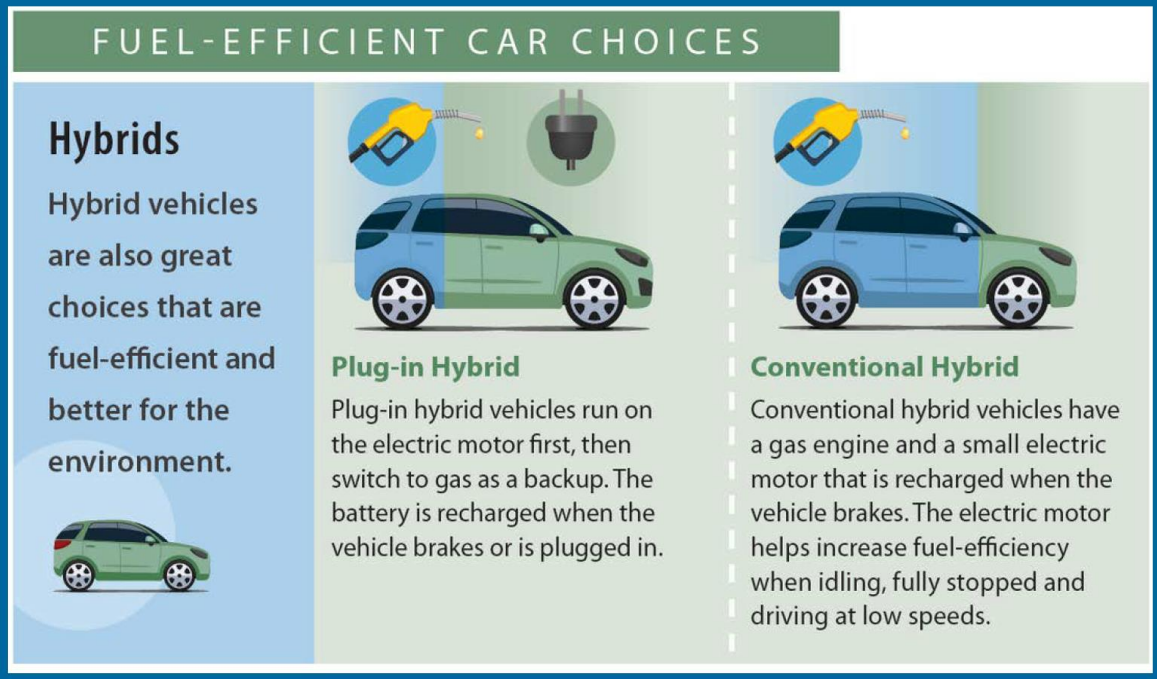
DE DMV Data – May 8, 2022

- Climate Action Plan envisions 17,000 new EVs sold each year by 2030
- Governor Carney announced that DE will move to adopt Advanced Clean Cars II vehicle emission standards
- Volvo, VW, GM, Toyota, Daimler/Mercedes and others pledge to be all electric by 2030/2035

Electric Vehicle Types



Examples: all Tesla models, Ford Mach-E, Volkswagen ID.4, Hyundai IONIQ 5, Chevrolet Bolt, Nissan Leaf



Examples: Chrysler Pacifica, Jeep Wrangler, Kia Niro, Lincoln Corsair/Aviator

Examples: Honda Accord, Toyota Prius, most newer vehicle models.

Types of Electric Vehicle Chargers

Type	Miles per hour of charging	Infrastructure Needs	Location
Level 1	3 to 7	• Single Phase AC • 110V/16A • Capacity of up to 19.9kW • No addt'l equipment needs	Homes and sometimes workplaces
Level 2	14 to 35	• Single-phase AC • 240V/32-80A • Capacity of 7.6-19.2kW • Needs addt'l equipment	Homes, workplaces, fleets and public charging
DC Fast Charging (DCFC)	Up to 10 miles PER MINUTE	• 480V AC input • Capacity higher than 22kW • Needs high-power, special equipment	Public charging stations especially along traffic corridors

What is the State's role in EV Infrastructure?

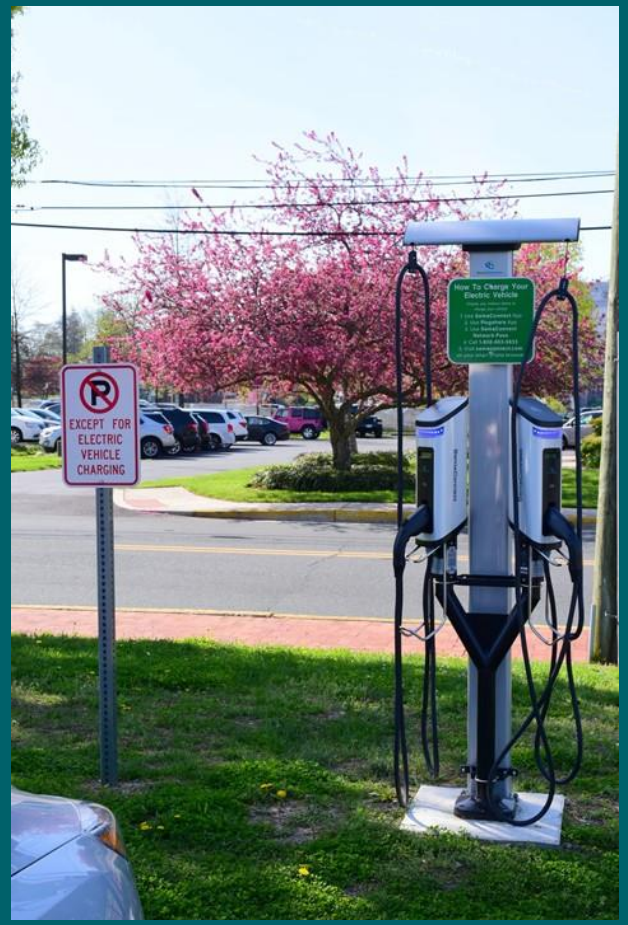
- Provide funding
- Establish contracting mechanisms
- Identify areas where governmental policy, regulations, guidelines, or procedures may need to be changed

…But <u>not</u> own EV infrastructure

What is an EV Infrastructure Plan?

What is an EV Infrastructure Plan?

- The goal of the EV Infrastructure Plan is to identify the future EV charging needs of Delaware.
- Special focus will be paid to:
  - Disadvantaged Communities (DAC)
  - Rural Areas
  - Residents of multi-unit dwellings
- Incorporates the following:
  - Assembling data on existing conditions
  - Preparing future forecasts
  - Engaging stakeholders & the public
  - Making recommendations for EV infrastructure priority areas



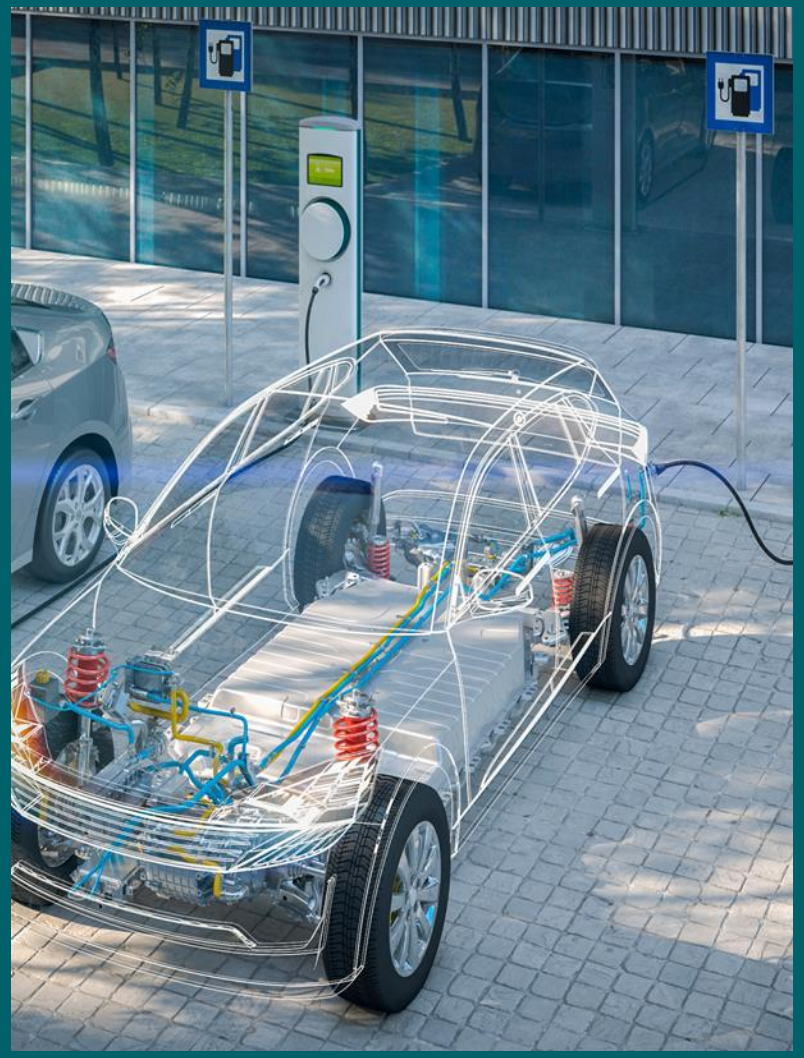
Plan Outline

- Plan Vision and Goals
- Public Involvement and Stakeholder Engagement
- Existing and Future Conditions Analysis
  - Delaware EV Market Analysis
  - Delaware EV Charging Demand Analysis
- Findings
- Deploying the infrastructure/building the future
  - Policy Barriers
  - Workforce development Needs
  - Funding Sources
- Resiliency and Sustainability

Draft Plan Vision

Enable current and future users of electric vehicles ***to confidently travel*** *in and across Delaware for work, education, recreation, and exploration.*

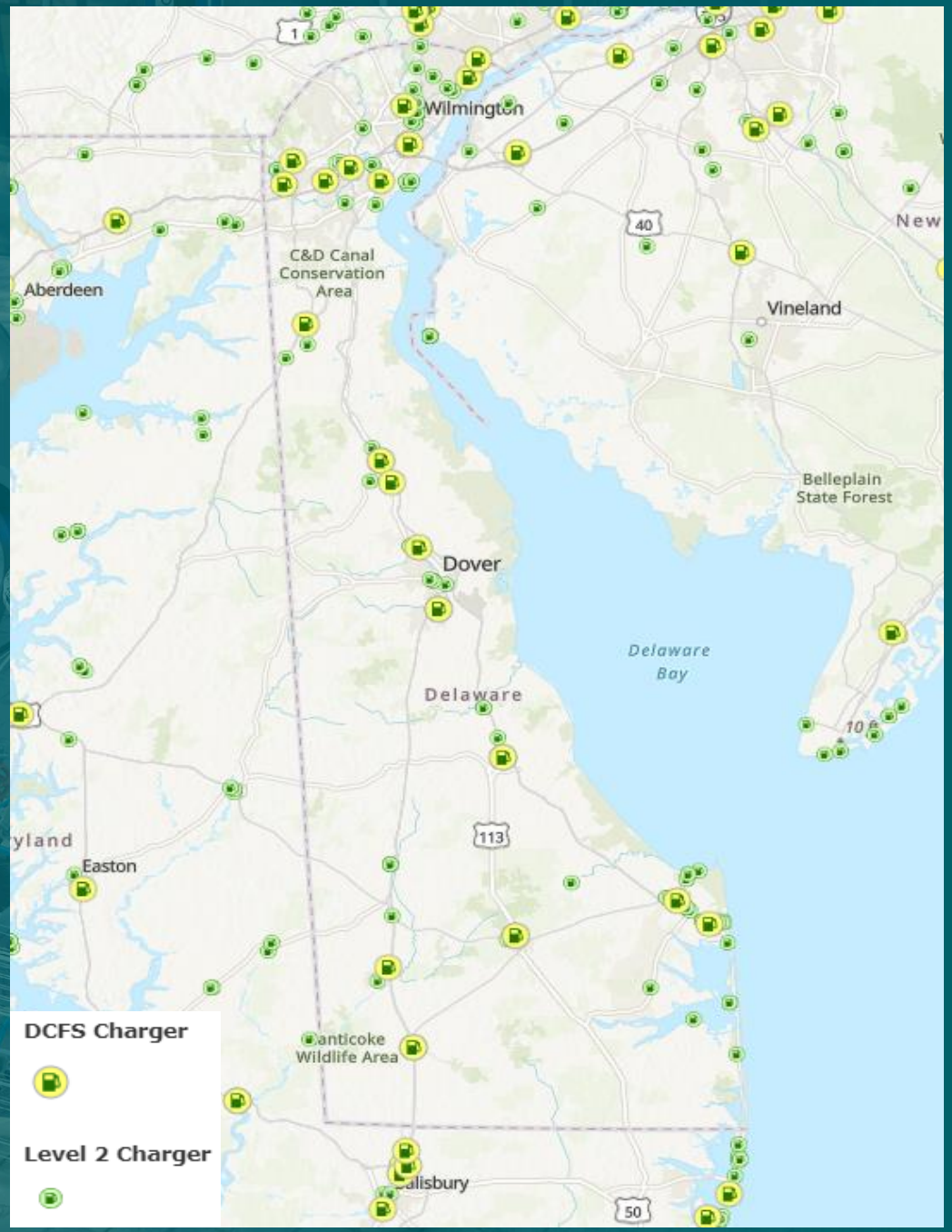
Do you have any feedback or suggestions?



Draft Plan Goal Areas – Do you have any feedback or suggestions?

- ***Equity:*** ensure that rural, underserved, and disadvantaged communities, including suppliers and contractors, are engaged and realize plan benefits
- ***Reliability:*** develop a reliable, convenient, affordable, and equitable EV infrastructure network in Delaware for all users
- ***Connections:*** connect Delawareans and travelers in Delaware to EV chargers to support an electric transportation future
- ***Education:*** develop outreach materials on electric vehicles, good charging habits, station location, station usage, equipment capability, and how to provide feedback on the network; use social media and apps
- ***Evaluation:*** develop a framework to collect data and evaluate the plan over time; refine and update as needed

Existing Conditions

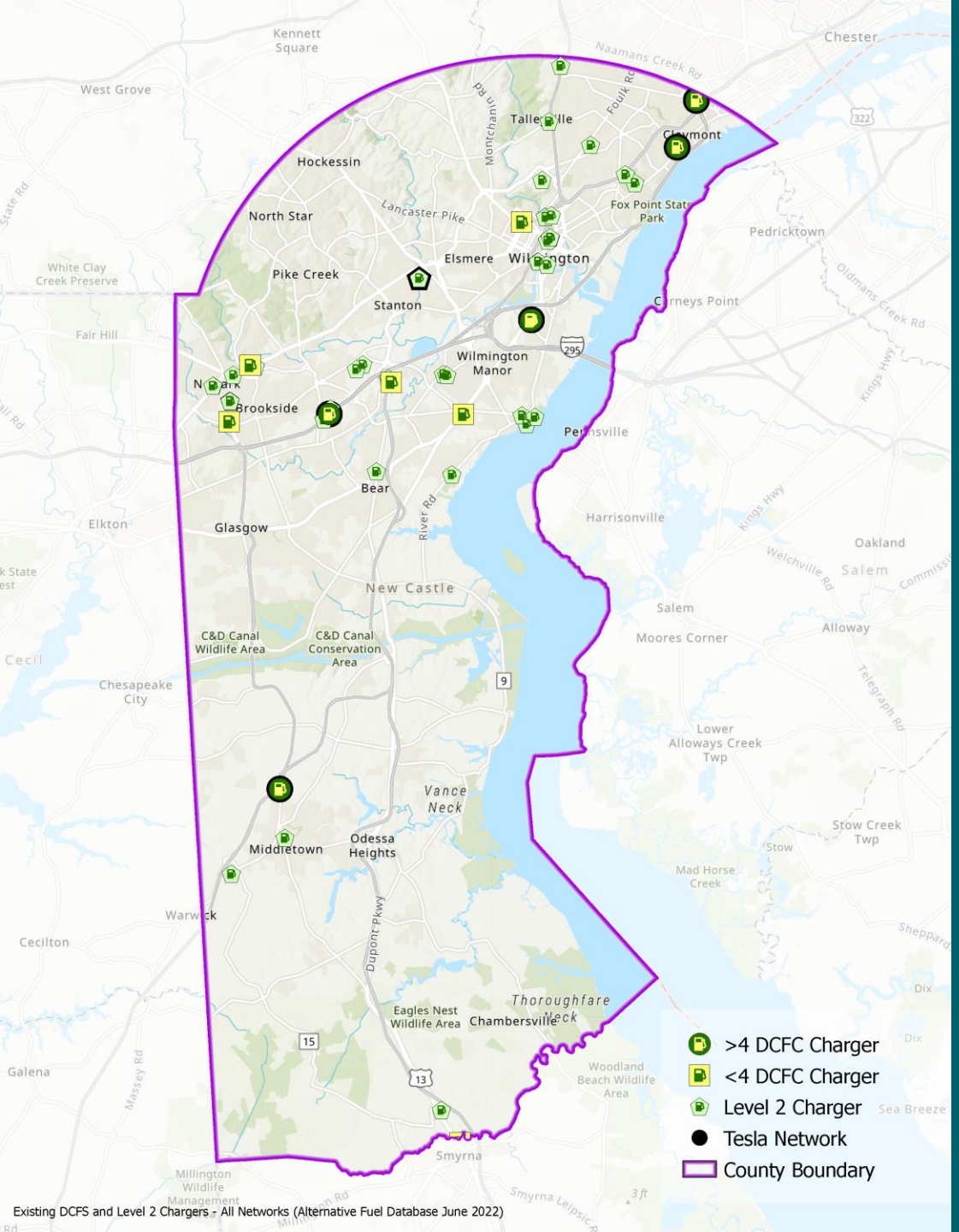


Existing Charging Infrastructure

-25 DCFC locations, 97 ports

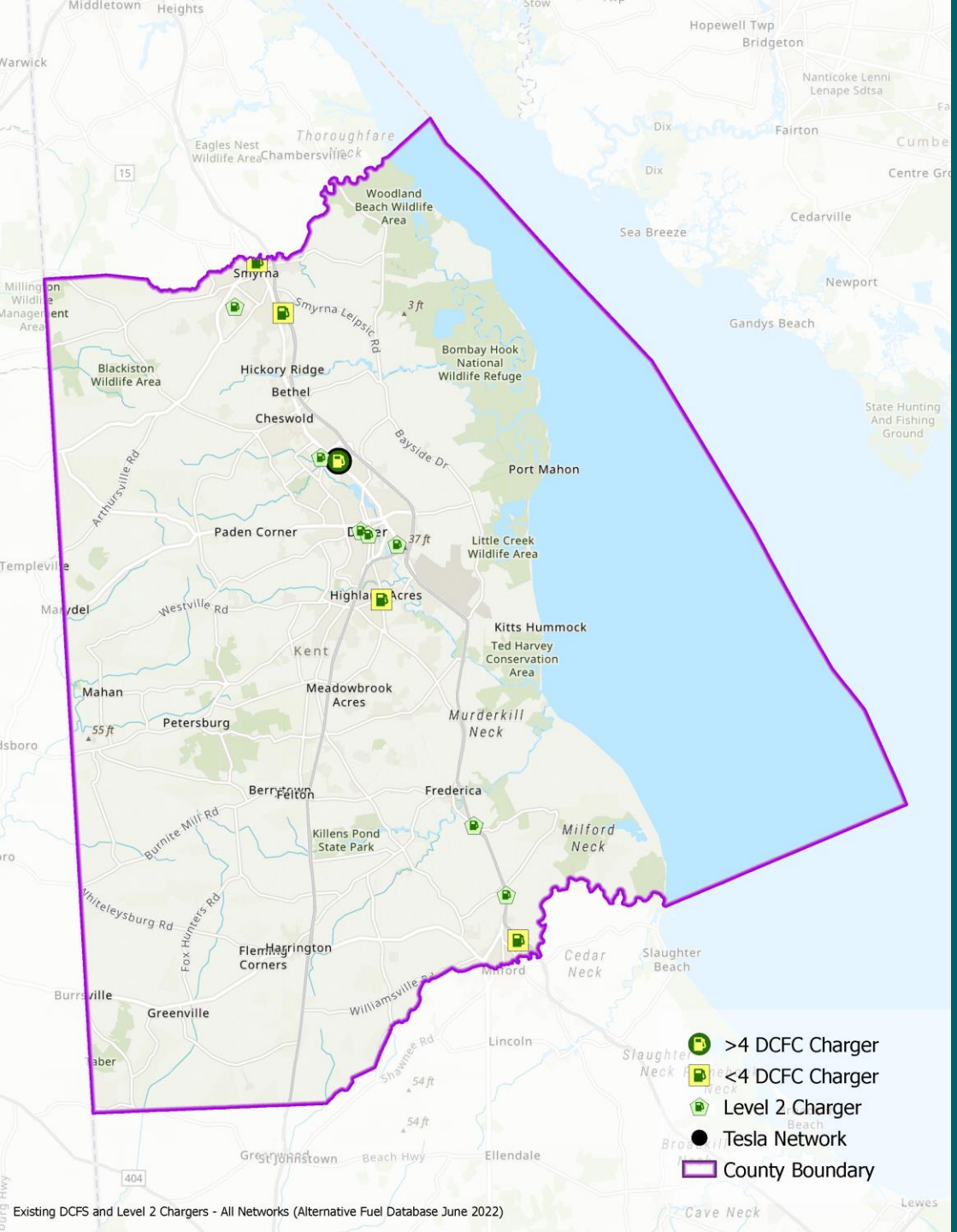
-108 Level 2 locations, 229 ports

New Castle County
Existing Network



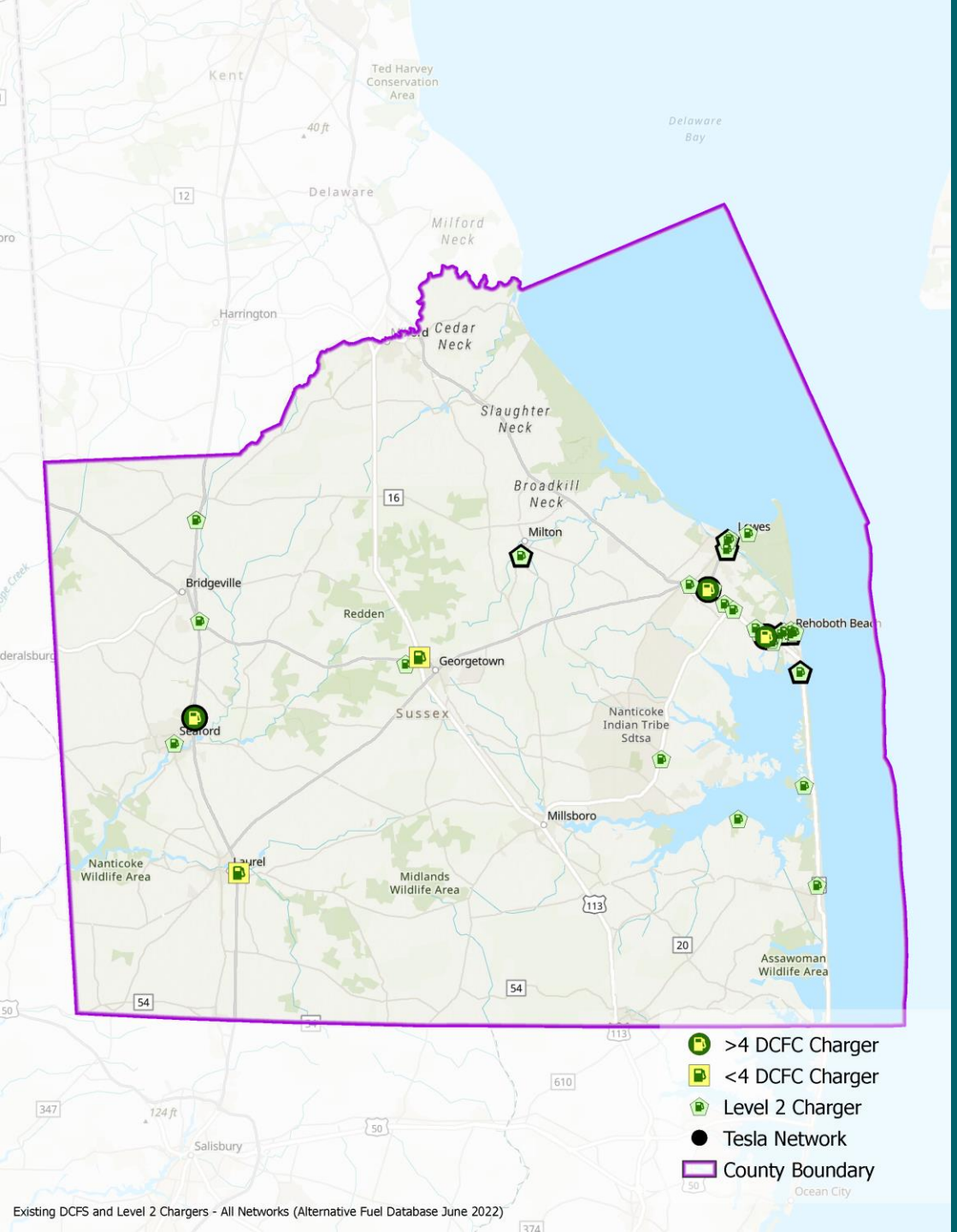
Existing DCFS and Level 2 Chargers - All Networks (Alternative Fuel Database June 2022)

Kent County
Existing Network

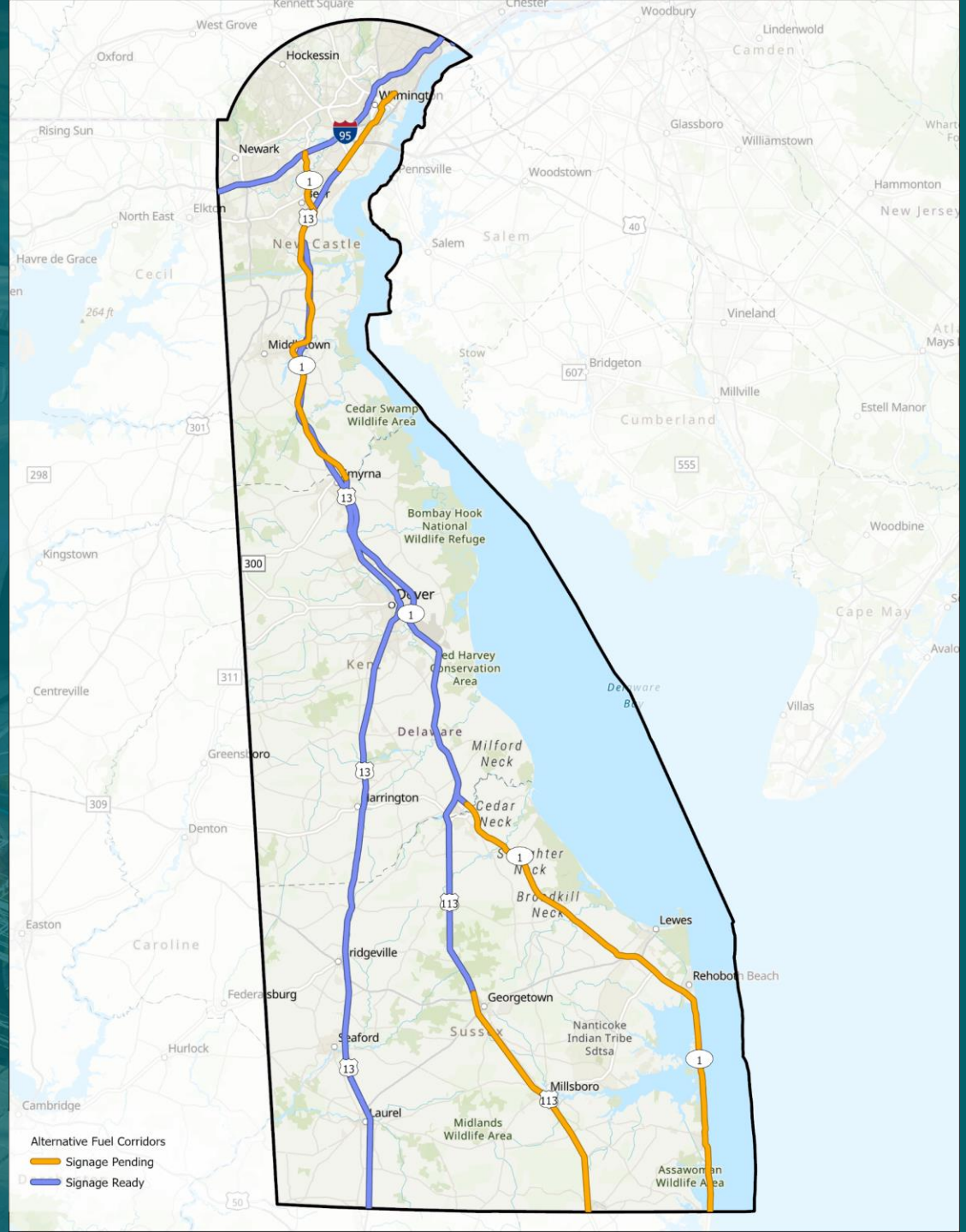


Existing DCFS and Level 2 Chargers - All Networks (Alternative Fuel Database June 2022)

Sussex County
Existing Network



Existing DCFS and Level 2 Chargers - All Networks (Alternative Fuel Database June 2022)



AECOM

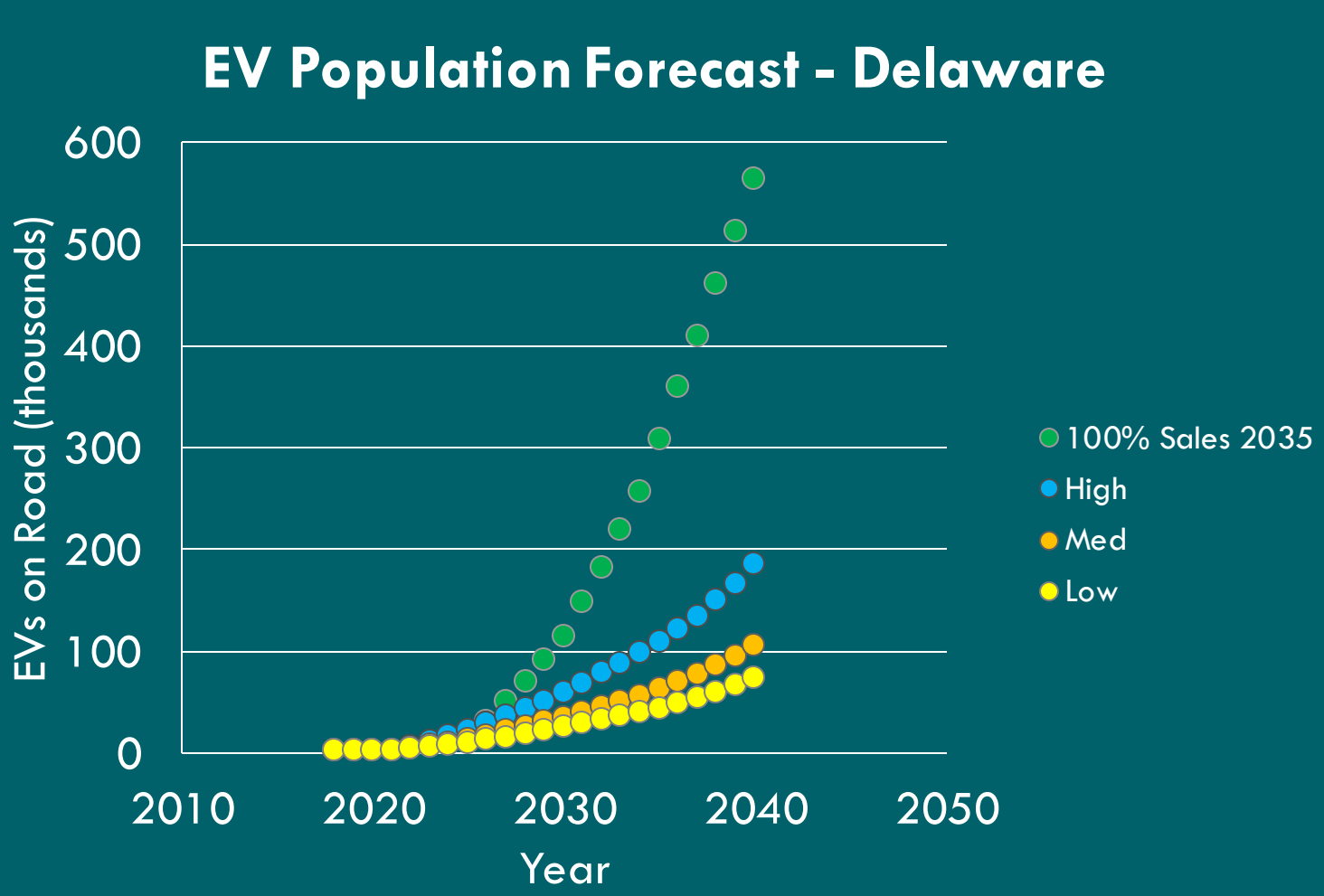
Existing Conditions: Designated Alternative Fuel Corridors (AFC)

AFC Routes:

- I-95
- I-295
- DE-1
- US-13
- US-113

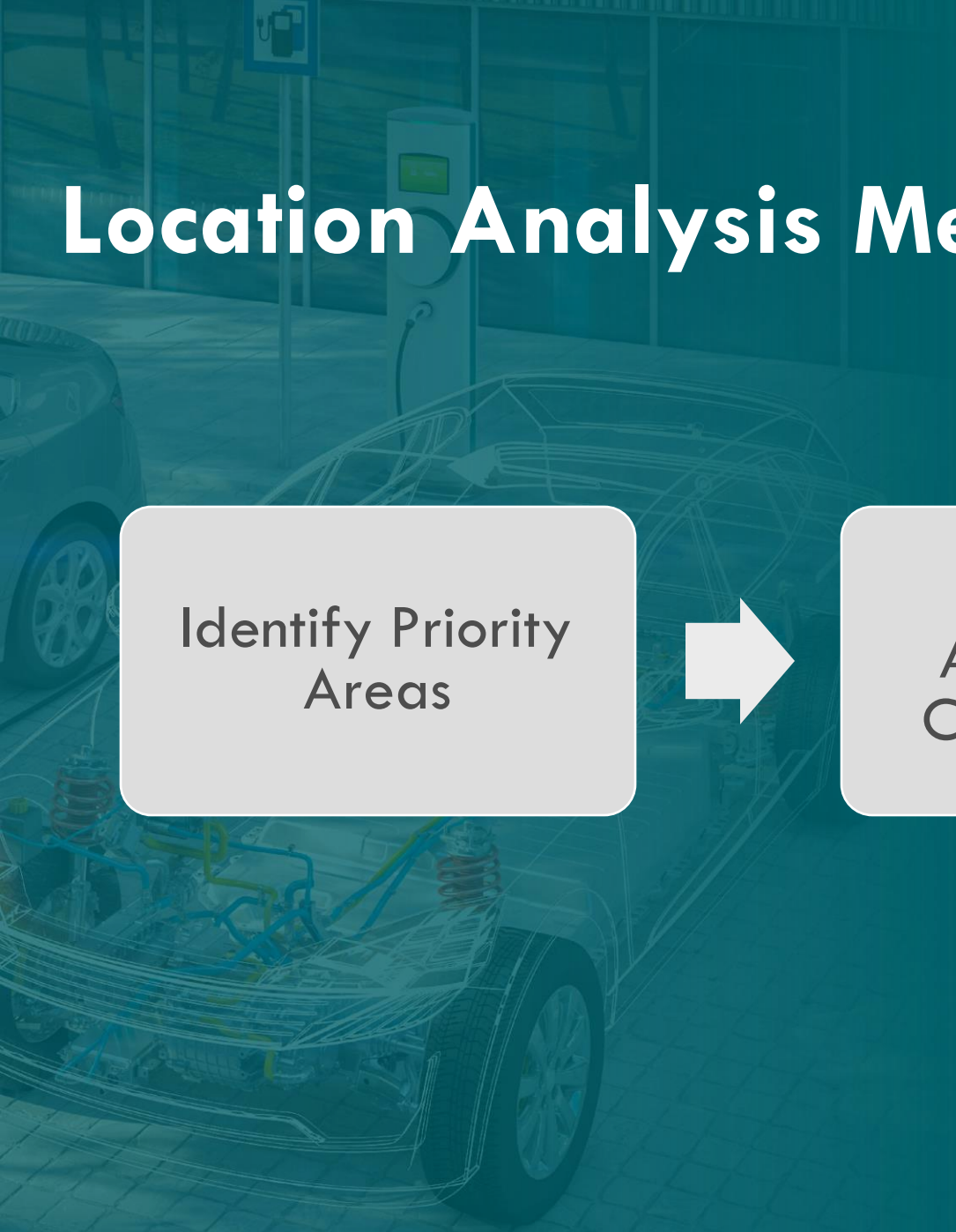
Charging Location Analysis

EV Adoption Scenarios



100% EV Sales 2035	2025	2030	2035
% EV Sales	6.6%	44.7%	100%
% EV Pop.	1.3%	11.7%	31.7%
High	**2025**	**2030**	**2035**
% EV Sales	11.8%	16.7%	20.8%
% EV Pop.	2.2%	6.1%	11.1%
Med	**2025**	**2030**	**2035**
% EV Sales	6.6%	9.5%	11.8%
% EV Pop.	1.3%	3.5%	6.4%
Low	**2025**	**2030**	**2035**
% EV Sales	4.6%	6.6%	8.2%
% EV Pop.	0.9%	2.5%	4.5%

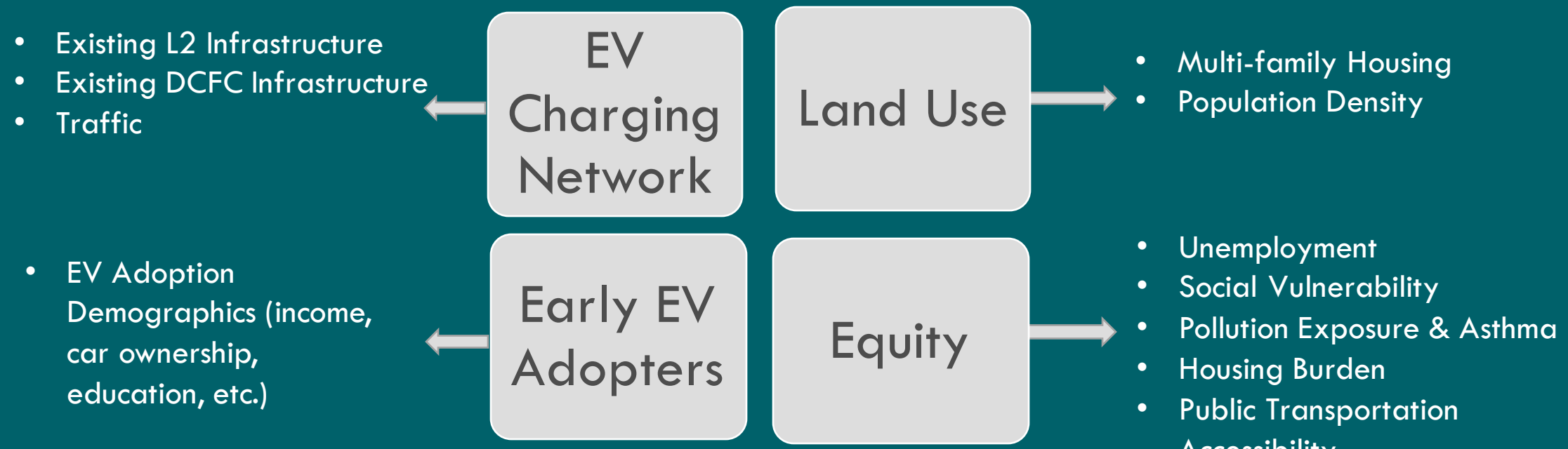
Location Analysis Methodology



Identify Priority Areas → Determine Appropriate Charger Type → Validate with Public and Stakeholder Engagement

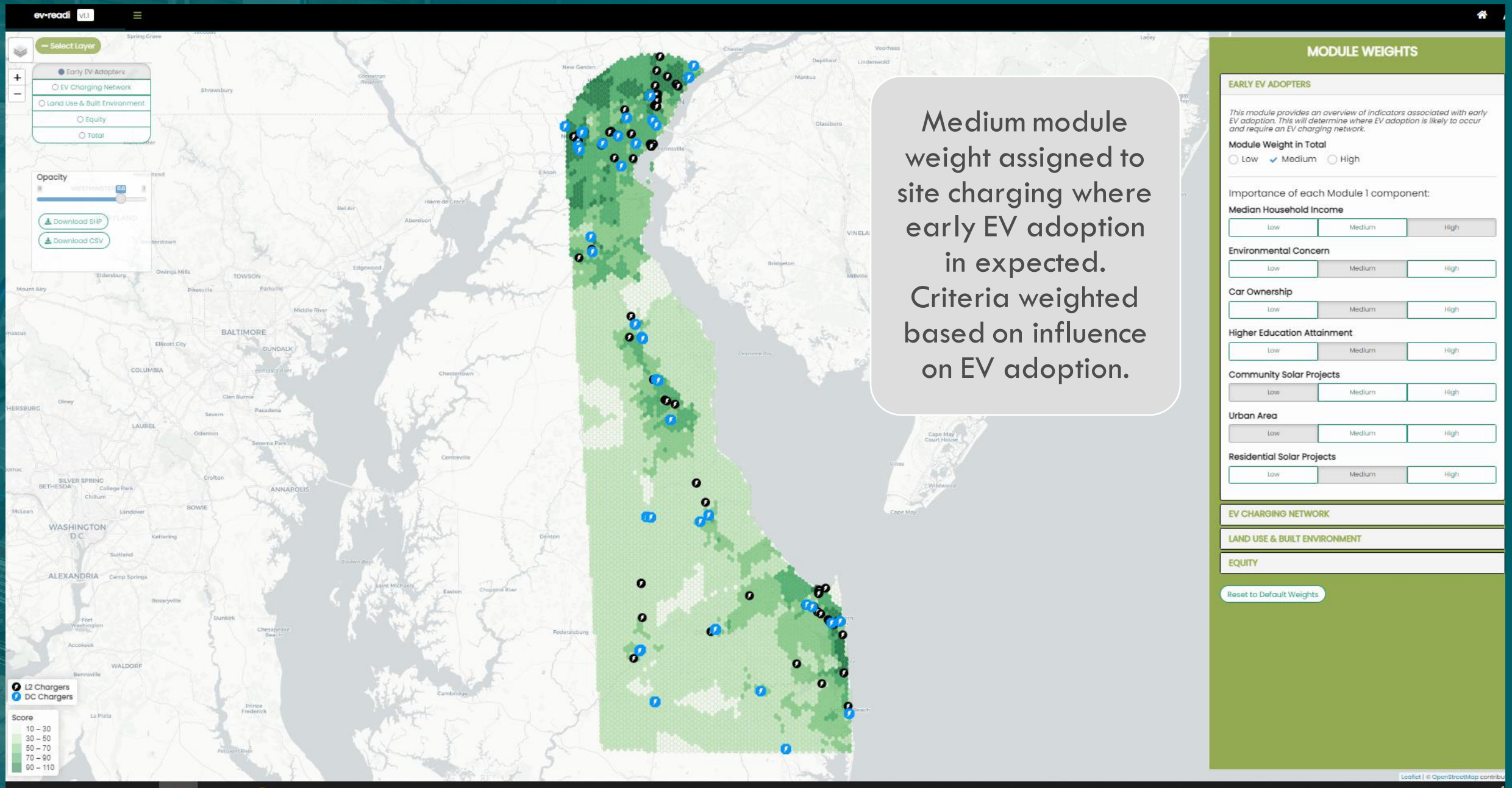
Identifying Priority Areas

- Each criteria and module can be weighted to align with state priorities.



Early EV Adopters

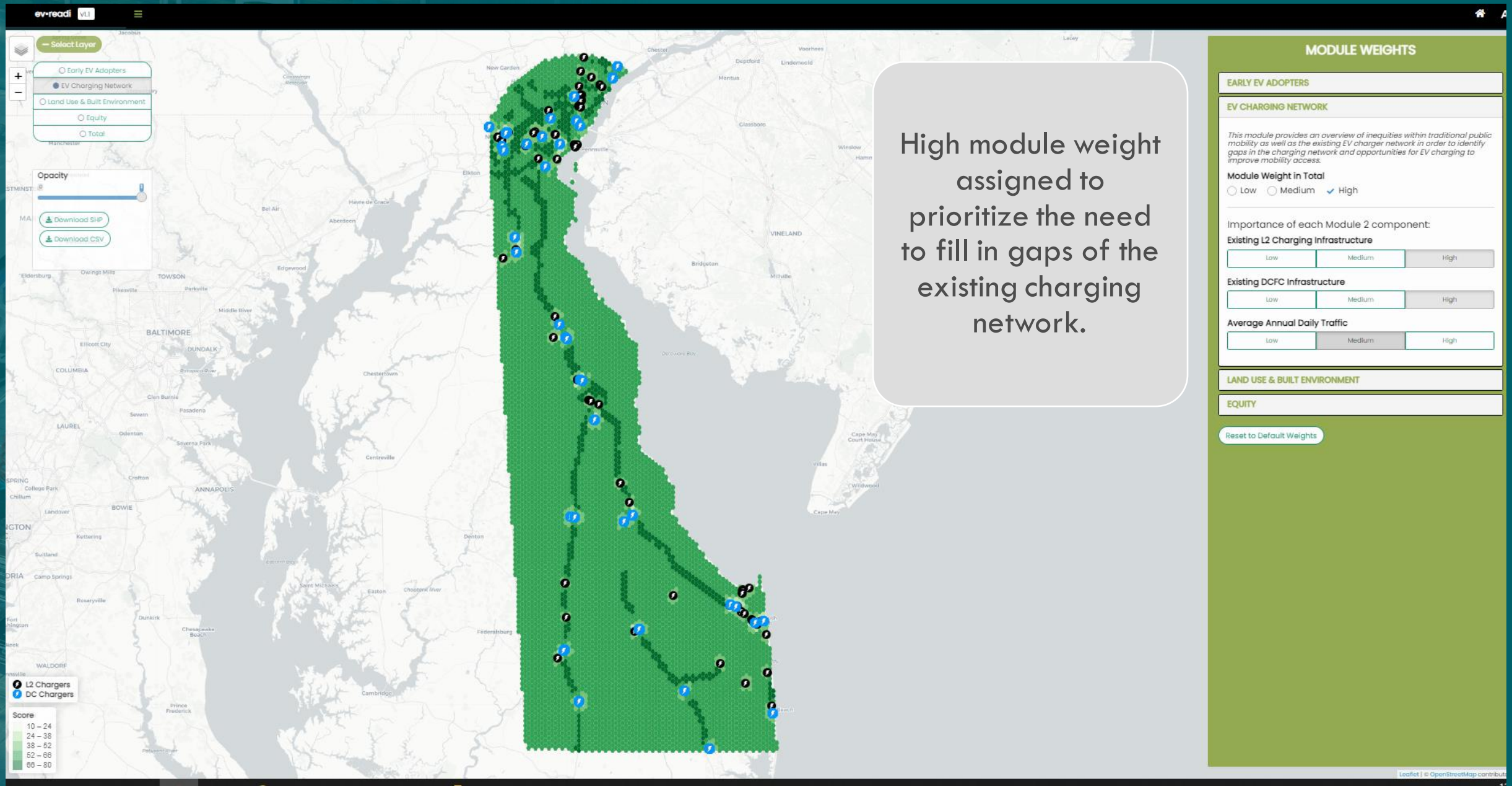
AECOM



Medium module weight assigned to site charging where early EV adoption in expected. Criteria weighted based on influence on EV adoption.

EV Charging Network

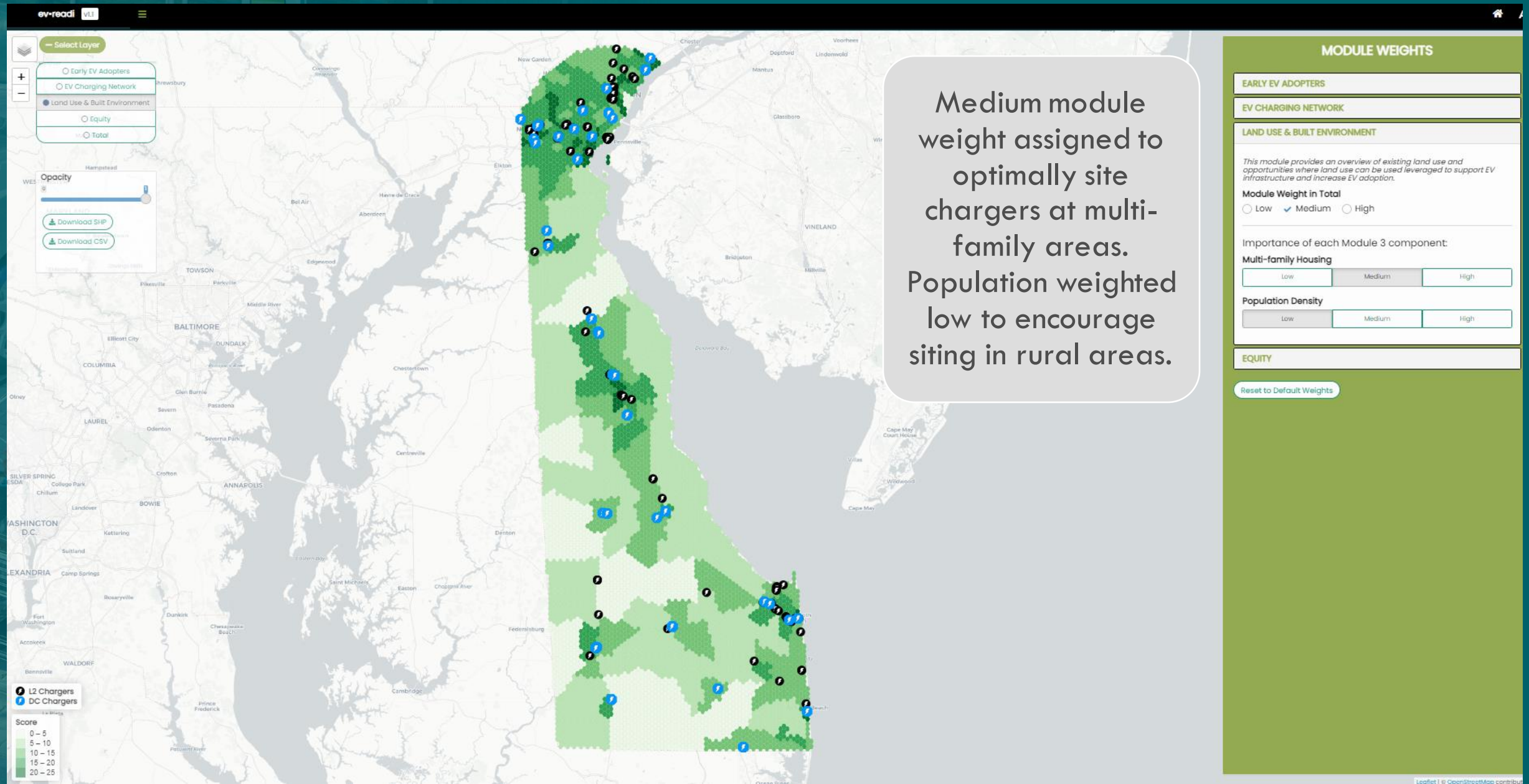
AECOM



High module weight assigned to prioritize the need to fill in gaps of the existing charging network.

Land Use & Built Environment

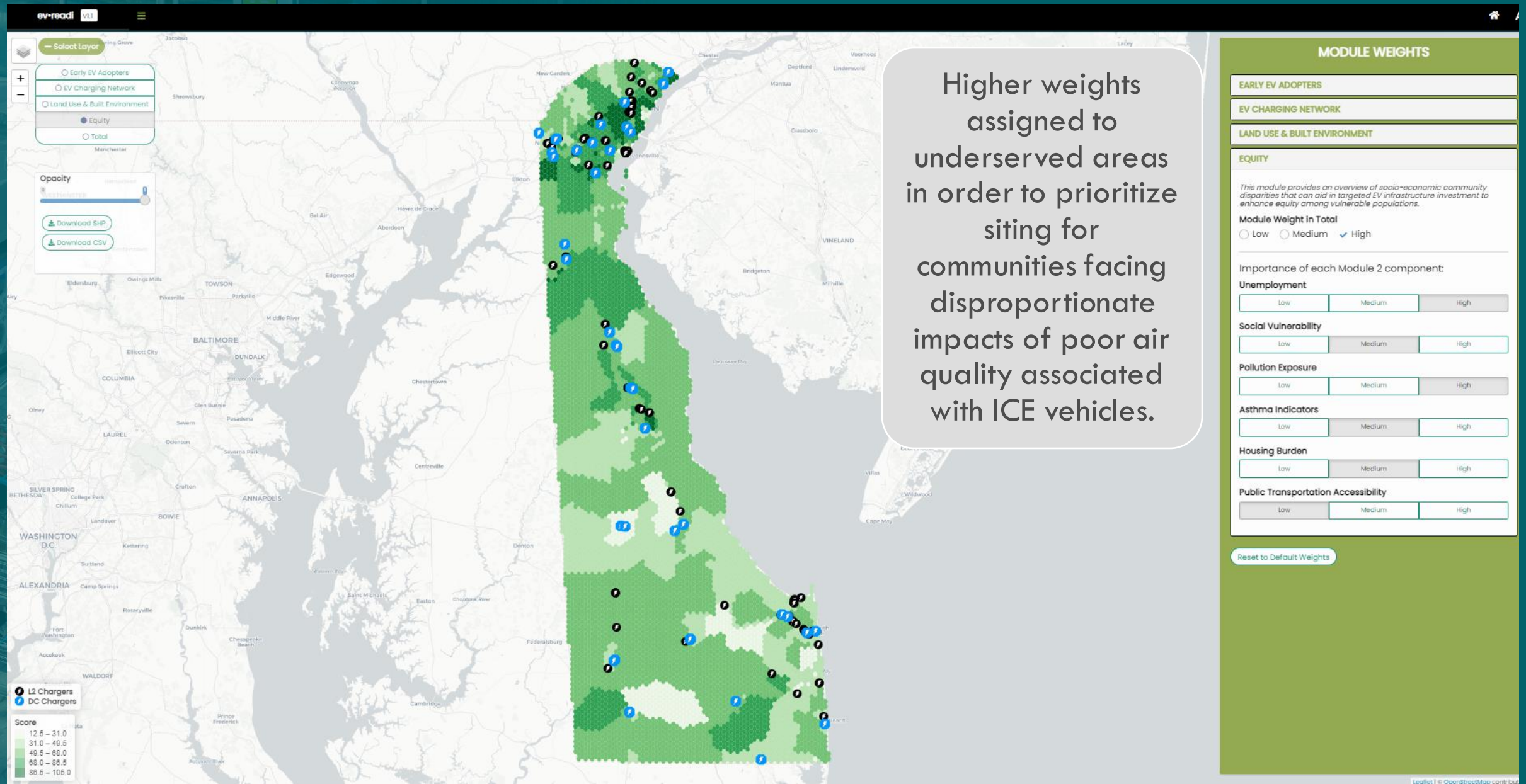
AECOM



Medium module weight assigned to optimally site chargers at multi-family areas. Population weighted low to encourage siting in rural areas.

Equity

AECOM



Higher weights assigned to underserved areas in order to prioritize siting for communities facing disproportionate impacts of poor air quality associated with ICE vehicles.

What do you think is the most important?

- Existing L2 Infrastructure
- Existing DCFC Infrastructure
- Traffic

EV Charging Network

Land Use

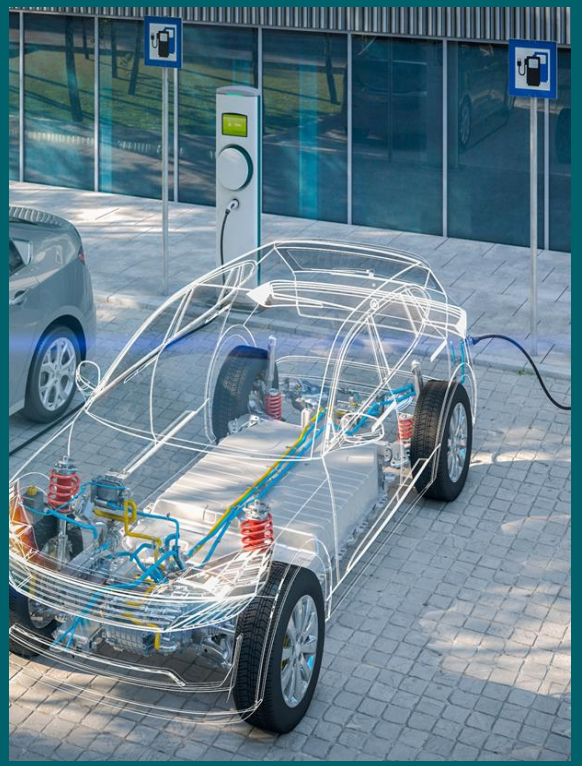
- Multi-family Housing
- Population Density

- EV Adoption Demographics (income, car ownership, education, etc.)

Early EV Adopters

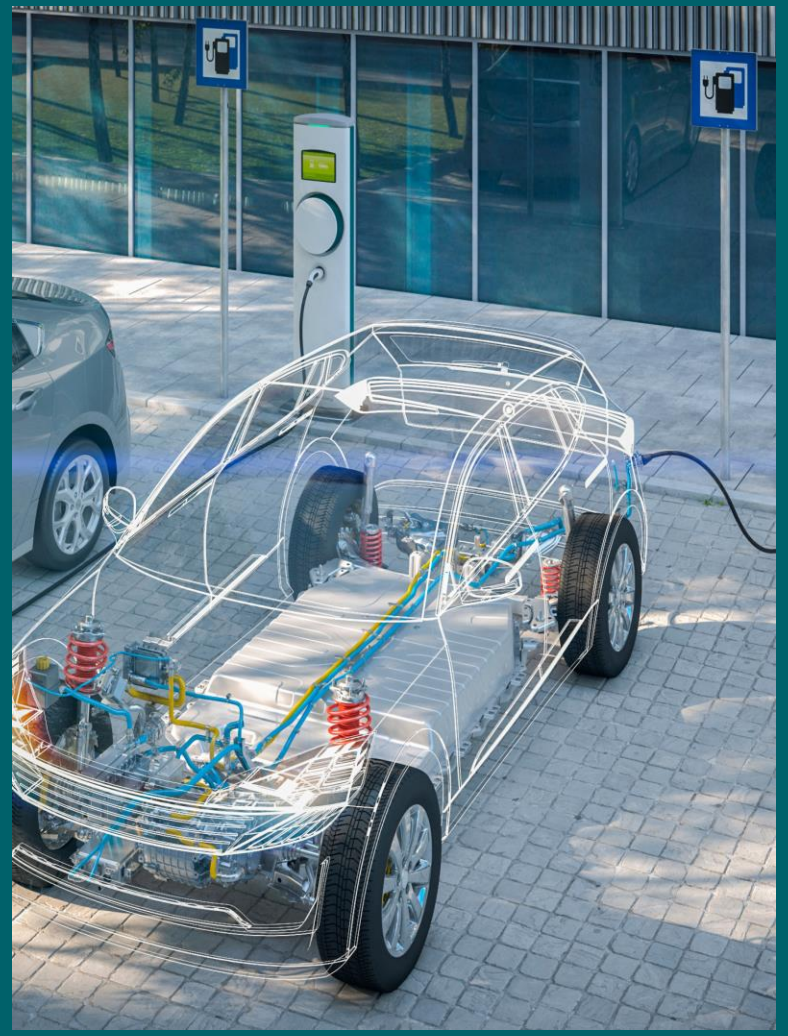
Equity

- Unemployment
- Social Vulnerability
- Pollution Exposure & Asthma
- Housing Burden
- Public Transportation Accessibility



Next Steps

- Review feedback received and incorporate
- Continue analysis and mapping for the EV Infrastructure Plan
- Share at next virtual Public Meeting this winter



How to Stay Involved

Visit & View	• Visit the EV plan's website, https://deldot.gov/Programs/NEVI/ • View the displays in the EV plan's virtual room
Complete or Send	• Complete an online comment form in the virtual room and include your email address • Send an email with a comment, suggestion or question to evplan@delaware.gov
Attend	• Attend the next virtual public workshop in the winter

Questions & Answers

Use Zoom's Q&A function

Thank you for joining the Online Informational Meeting on the Delaware Statewide EV Infrastructure Plan!

The next presentation will begin at 6:00pm.

Visit the EV Infrastructure Plan's website at
https://deldot.gov/Programs/NEVI/